CM & DM in an ISO R&D Environment

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ISO 9000 – a common buzz word in industry is making inroads to government agencies. The National Aeronautics and Space Agency (NASA) achieved ISO 9001 certification at each of its nine (9) Centers and Headquarters in 1998-1999. NASA Glenn Research Center (GRC) was recommended for certification in September 1999. Since then, each of the Centers has been going through the semi-annual surveillance audits. Growing out of the manufacturing industry, successful application of the international quality standard to a research and development (R&D) environment has had its challenges. This paper will address how GRC applied Configuration Management (CM) and Data (or Document) Management (DM) to meet challenges to achieve ISO certification.

One of the first challenges was to fit the ISO 9001-1994 elements to the GRC environment. Some of the elements fit well—Management Responsibility (4.1), Internal Audits (4.17), Document and Data Control (4.5). Other elements were not suited or applied easily to the R&D environment—Servicing (4.19), Statistical Techniques (4.20). Since GRC "builds" only one or two items at a time, these elements were considered not applicable to the environment.

GRC also relies on key processes not covered by the ISO 9001 standard—library services and research. This, coupled with the impending revision of the standard, posed another challenge. GRC chose to pursue a Business Management System (BMS) approach that mapped to the Center's strategic management process. The BMS is composed of four (4) functional areas:

> Center Planning and Directing (1.0) – Procedures for Mission and Enterprise support planning, institutional investment planning, and quality system planning
>
> Program/Project Management (2.0) – Procedures for transforming customer requirements into deliverable products and services.
>
> Institutional/Resources Management (3.0) – Procedures for managing the Center's resources and capabilities for program and project utilization, including technical capability, facilities, personnel, and information technology systems.
>
> Center Performance Evaluation (4.0) – Procedures for evaluating the performance of the Center and the Business Management System itself.

Fitting the ISO 9001-1994 elements into the BMS structure was not always easy, but the structure is more in sync with ISO 9001-2000. Some additional procedures will be needed to be in compliance with the new version of the standard. Though few in number, the new procedures may be difficult to implement since they involve measuring processes and customer satisfaction that are not currently done.

With the BMS structure in place, a document hierarchy needed to be addressed. But first things first—a quality policy needed to be established. The Center's senior staff agreed upon:

> GRC Quality Policy
> Our commitment to innovation and continuous improvement ensures quality products, excellent services, and satisfied customers.